

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A method of determining user interactions comprising the steps of:

determining speech information;

determining discourse functions and prosodic features in the speech information;

~~determining~~ selecting a predictive interaction model, the predictive interaction model developed by associating discourse functions and prosodic features of a training corpus of turn annotated speech with turn information of the training corpus of turn annotated speech; and

determining an interaction turn, in the speech information, based on the predictive interaction model and the ~~determined~~ discourse functions of the speech information and the prosodic features of the speech information, ~~wherein the discourse functions are determined based on a theory of discourse analysis, the theory of discourse analysis being at least one of: the Linguistic Discourse Model, the Unified Linguistic Discourse Model, Rhetorical Structures Theory, Discourse Structure Theory and Structured Discourse Representation Theory~~

wherein the predictive interaction model accepts the prosodic features of the speech information as one input and a current discourse function of the speech information as another input and determines a likelihood that a next discourse function is associated with the interaction turn.

2. (Original) The method of claim 1, in which the discourse functions are determined from automatically recognized speech information.

3.-4. (Cancelled)

5. (Original) The method of claim 1, further comprising the step of scheduling an interaction event based on the turn prediction.

6. (Original) The method of claim 1, in which the prosodic features include at least one of: a silence preceding a discourse functions; a silence following a discourse function; rate of speech; pitch frequency; changes in pitch frequency and volume.

7. (Currently amended) A method of determining a predictive interaction model comprising the steps of:

determining a training corpus of turn annotated speech information;

determining discourse functions and prosodic features associated with ~~[[the]]~~ a turn information of the turn annotated speech information; and

determining a predictive interaction model based on the discourse functions, the prosodic features and the turn information, ~~wherein the discourse functions are determined based on a theory of discourse analysis, the theory of discourse analysis being at least one of: the Linguistic~~

~~Discourse Model, the Unified Linguistic Discourse Model, Rhetorical Structures Theory, Discourse Structure Theory and Structured Discourse Representation Theory~~

wherein the predictive interaction model is adapted to accepting the prosodic features of a speech information as one input and a current discourse function of the speech information as another input and determining a likelihood that a next discourse function is associated with the turn information.

8. (Previously Presented) The method of claim 7, in which the predictive interaction model is determined based on at least one of machine learning, decision tree, Naive Bayes, rules and statistics.

9. (Cancelled)

10. (Currently amended) A system for determining interactions comprising:
an input/output circuit for retrieving recognized speech and prosodic features;
a processor that determines speech information; and discourse functions and prosodic features in the speech information; determines a predictive interaction model; and determines an interaction turn based on the predictive interaction model and the discourse functions and prosodic features in the speech information, ~~wherein the discourse functions are determined based on a theory of discourse analysis, the theory of discourse analysis being at least one of: the~~

~~Linguistic Discourse Model, the Unified Linguistic Discourse Model, Rhetorical Structures Theory, Discourse Structure Theory and Structured Discourse Representation Theory~~

wherein the predictive interaction model accepts the prosodic features of the speech information as one input and a current discourse function of the speech information as another input and determines a likelihood that a next discourse function of the speech information is associated with the interaction turn.

11. (Original) The system of claim 10, in which the discourse functions are determined from automatically recognized speech information.

12.-13. (Cancelled)

14. (Original) The system of claim 10, in which the processor also schedules an interaction event based on the turn prediction.

15. (Original) The system of claim 10, in which the prosodic features include at least one of: a silence preceding a discourse functions; a silence following a discourse function; rate of speech; pitch frequency; changes in pitch frequency and volume.

16. (Currently amended) Computer readable storage medium comprising: computer readable program code embodied on the computer readable storage medium, the computer readable program code usable to program a computer to determine interactions comprising the steps of:

determining speech information;

determining discourse functions and prosodic features in the speech information;

determining a predictive interaction model, the predictive interaction model being developed by associating discourse functions of a training corpus of turn annotated speech and prosodic features of the turn annotated speech with turn information of the turn annotated speech;
and

determining an interaction turn based on the predictive interaction model and the determined discourse functions and prosodic features, ~~wherein the discourse functions are determined based on a theory of discourse analysis, the theory of discourse analysis being at least one of: the Linguistic Discourse Model, the Unified Linguistic Discourse Model, Rhetorical Structures Theory, Discourse Structure Theory and Structured Discourse Representation Theory.~~

wherein the predictive interaction model accepts the prosodic features of the speech information as one input and a current discourse functions of the speech information as another input and determines a likelihood that a next discourse function is associated with the interaction turn.

17. (Original) The method of claim 1, in which the speech information is at least one of: verbal natural language information and non-verbal natural language information.

18. (Original) The method of claim 17, in which the non-verbal information is at least one of: sign language gestures, pen gestures, hand gestures, body gestures and facial gestures.

19. (Original) The method of claim 7, in which the speech information is at least one of: verbal information natural language and non-verbal natural language information.

20. (Original) The method of claim 18, in which the prosodic features include at least one of: facial expressions, gesture velocity, and gesture force.

21. (New) The method of claim 1, wherein the discourse functions are determined based on a theory of discourse analysis.

22. (New) The method of claim 21, wherein, the theory of discourse analysis is at least one of: the Linguistic Discourse Model, the Unified Linguistic Discourse Model, Rhetorical Structures Theory, Discourse Structure Theory and Structured Discourse Representation Theory.

23. (New) The method of claim 7, in which the discourse function determined based on a theory of discourse analysis.

24. (New) The system of claim 10, in which the discourse functions are determined based on a theory of discourse analysis.

25. (New) The system of claim 24, in which the theory of discourse analysis is at least one of: the Linguistic Discourse Model, the Unified Linguistic Discourse Model, Rhetorical Structures Theory, Discourse Structure Theory and Structured Discourse Representation Theory.